THE PLACE OF THE VETERINARIAN IN MUNICIPAL MILK AND FOOD INSPECTION*

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THE PLACE of the veterinarian in municipal milk and food inspection varies widely between countries, depending upon the types of municipal governments which have developed, the kinds and scope of milk and food hygiene programs conducted, and the degree to which other professional groups have assumed responsibility in the field.

FEW IN NUMBERS

When we consider the total number of persons engaged in municipal milk and food work in the United States, veterinarians are conspicuous by their scarcity. In an estimate provided to the American Veterinary Medical Association in 1958, a total of only 400 veterinarians was shown as being employed full-time by local health departments for all types of public health assignments. The same report showed that a 1950 estimate by Dr. Haven Emerson, adopted by the 1950 Conference on Public Health Needs of the Nation, would indicate a need by local health departments for more than 1,700 veterinarians.

To a certain extent, the scarcity of veterinarians in this field is due to: (i) competition from other areas of work for veterinary competencies and personnel; (ii) inadequate salaries; and (iii) a lack of full appreciation by other professional and administrative personnel of the broad medical training and capabilities of veterinarians, or the significance of these capabilities in various aspects of food hygiene programs.

Not Enough Room at the Top

A major force limiting the number of veterinarians in local milk and food work, is that in many municipalities no provisions have been made for veterinary positions at the higher supervisory and administrative levels. This situation has contributed toward a feeling on the part of some veterinarians, unfortunately fostered in the past at certain veterinary colleges, that ambitious and capable members of the profession could find milk and food inspection attractive only as a part-time activity for added income, as a "job to retire to," or as a last resort.

A COMPLEX TASK

Contrary to the decreasing measure of support they sometimes receive, official food hygiene programs must deal with increasingly serious and complex problems.

Food hygiene has public health aspects at the point of production of raw agricultural products, during food processing, and throughout the distribution

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and consumption of foods. The adequate production of food supplies including prevention from spoilage or destruction after production; occupational health problems; and prevention of foodborne disease outbreaks, chemical poisoning, and other deleterious and perhaps chronic, cumulative or genetic effects on man, are all health factors.

The classical foodborne disease outbreaks caused by the salmonellae, staphylococci, and other common organisms continue to occur with unnecessary frequency. Moreover, current problems include biological and chemical techniques in agricultural production and food processing; the extremely high incidence of mastitis in dairy cattle, associated with antibiotic residues, antibiotic-resistant strains of organisms, and bacterial toxins in market milk and milk products; the annual use of hundreds of millions of pounds of pesticides and billions of pounds of detergents, with a wide variety of avenues for entry into the Nation's food supply; the threat of radio-active elements from possible nuclear reactor accidents or other sources; and the possible relationships between the chronic diseases and aging processes and nutrition, food components, and intentional or accidental food additives.

Many People Involved—Government Must Lead and Regulate

Many persons are involved in the chain of production, processing, and distribution of foods—the actions of practically all of them are related to the final wholesomeness and safety of food.

It is obvious that no one person, profession, or group can lead or direct all of these diverse activities. Yet, where matters of public health are concerned, there must be an overall co-operative working relationship which will keep these activities correlated to such an extent as to prevent, control, or minimize the present and future public health hazards. In the public interest, Federal, State and local governmental agencies must accept this responsibility and be the focal point for voluntary co-operation as well as the source of necessary official regulations.

Thus, the veterinarian in a municipal milk and food program may deal with: (i) numerous categories of people outside of government; (ii) persons with various professional training and experience in other types of governmental agencies, and (iii) physicians, nurses, engineers, sanitarians, bacteriologists, statisticians, and other scientists in public health agencies.

Why Veterinarians?

The role of veterinarians generally in official milk and food hygiene programs is related to the broad biological and medical training received in their undergraduate training.

In the United States, meat and poultry inspection programs, animal disease eradication programs, and related research activities are conducted by the U. S. Department of Agriculture, and by State agencies in some instances. There remain many meat and poultry slaughtering plants and processing establishments, however, which do not engage in interstate commerce, and which remain under local supervision only.

Milk sanitation programs in the United States have traditionally been carried out at the local level, with advice and assistance from State agencies and the

Public Health Service of the U.S. Department of Health Education and Welfare. However, the U. S. Department of Agriculture and State agricultural agencies conduct the official brucellosis, tuberculosis, and other animal disease eradication programs.

With respect to veterinary activities which are conducted by State or Federal employees, or by veterinary practitioners on a part-time employee basis or in the course of their clinical practice, the veterinarian in a municipal health department may provide only advisory or liaison services. On the other hand, he usually conducts, participates in, or supervises those phases or portions of the programs which come under municipal control, including laboratory and research services.

Individual Assignments

The role of the individual veterinarian may go far beyond that described for veterinarians generally.

Through personal interest and ability, coupled with the proper postgraduate experience and training, a veterinarian may become qualified to engage in practically any phase of food hygiene. At the municipal level, he may supervise specific activities, such as milk sanitation, meat inspection, or food service sanitation.

On occasion, he may become director of the complete environmental health program, or even local health officer, with administrative control of many other health services as well as of milk and food inspection.

The point to be emphasized is that the individual is seldom assigned to top level positions merely because he is a veterinarian. In addition to having his veterinary degree, he must demonstrate the necessary personal attributes and gain the proper postgraduate experience and training.

Associated with this is the fact that many municipal health departments developed over the years without effective veterinary public health services. In most instances, recognition of the full potential of veterinary contributions comes only when an individual veterinarian has demonstrated on the job unusual ability and performance.

The Education Question

We often hear the comment that the undergraduate veterinary curriculum provides ideal preparation for work in the field of food hygiene. If such statements are not properly qualified, they can be of great disservice to the young veterinary graduate who may thus be led to believe that he is entirely qualified to "start at the top" in any phase of food hygiene. For a more realistic viewpoint, we might consider some comments received from a veterinarian who is in charge of the milk and food sanitation program in one of the large cities of the United States:

> I think that the first thing to be considered is that the veterinary school curriculum does not give the veterinarian any special competency in food sanitation . . .
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> . . . I do not think the question lies on how food hygiene should be taught but whether it should be taught at all in the veterinary school. The present limited instruction in food hygiene is not particularly useful and to expand the program would mean decreasing the other basic and clinical courses which are of main interest to the majority of the students. Only a small part of the student body will go on to do work in public health and an extremely small number will go on to do food hygiene. (Not counting meat and poultry inspection.) I have had some limited experience with veterinary students and food hygiene and for the most

part they are totally uninterested. The medical schools, though, seem to have the same experience with students in courses in public health. It would seem that only practical or graduate school training, or both, after completion of the veterinary school curriculum will allow the veterinarian to compete in the field of food hygiene. It is specious to use the argument that there is something special in the training of the veterinarian that fits him for this field. The advancing state of food technology prepares the man trained in food technology or chemistry or bacteriology more adequately than the course in veterinary medicine to cope with food hygiene problems. Additionally there is nothing in the veterinary training to develop the administrative skills needed to guide a governmental program. In fact, the emerging sanitarian, that is the man trained specifically in sanitary science and prepared for public health work, is in a much better competitive position for this type of position.

However, there is a great deal to be said for a man who has a good basic scientific education and then goes on to develop a special skill through formal training and experience. The veterinarian who does have an interest in food hygiene has ample opportunity for graduate training and should pursue such training. I do not think there are many veterinarians interested in food hygiene. Even among those veterinarians in public health work already, there is little consideration of participation in a food hygiene program on a day to day basis. The veterinary profession and veterinary societies, of course, give little recognition to veterinarians in food hygiene activities, and a public relations program within our own profession might not be a bad start.

You asked what I do in my job here and I shall try to answer you briefly. I am in charge of the Milk and Food Sanitation Program . . . Dr. . . . who is our Public Health Veterinarian, has supervision over meat and poultry slaughtering establishments, and all other food establishments (some 28,000) come under the purview of the Milk and Food Section . . . Essentially, the work is divided between the administrative aspects and the technical consultative aspects. I think this point is of some importance, since in neither of these areas is there any real specific application of veterinary skills. In fact, the man in the food hygiene work has to think of himself primarily as a member of the health profession (specifically the field of environmental health) with an equal concern in the field of governmental administration. As the worker in this field progresses or wishes to progress, he must move from his general veterinary education to special education in the specific subject and then back to being a generalist—but this time a generalist in the area of program administration and the total environmental health programs.

Of course, some persons may not entirely agree with the above comments. Nevertheless, we can agree that his undergraduate training alone does not make the average veterinary graduate a full-fledged success in the fields of surgery, pathology, chemistry, bacteriology, virology, parasitology, nutrition, radiology, epidemiology, or clinical practice. Rather it provides the broad foundation upon which to base the subsequent experience and training essential to becoming a specialist in one of these, or in other fields.

Opportunities for the Profession

In spite of tremendous progress made to date on animal disease control, U.S. livestock and poultry production losses continue at a high level. There is a constant threat that foreign animal diseases may gain a foothold. Modern air travel makes this threat even more serious. All areas of food hygiene present continuing, serious and complex problems. It is obvious that there will be increasing opportunity and need for veterinary surveillance, research, control programs, consultation, and training on various phases of these problems in government, industry, educational institutions, and voluntary agencies. Only a few examples can be mentioned here.

Mastitis

It is estimated that 25 per cent of dairy cows in the United States are infected with the organisms which cause mastitis, with an average 22 per cent reduction in milk produced by infected quarters. Mastitis causes annual losses and related expenses of over a quarter of a billion dollars. During the past decade, antibiotics have been of great aid in controlling streptococcal mastitis and protecting the milk supply. Recent indications are, however, that antibiotic-resistant staphylococci or other bacteria frequently develop in the udders of treated cows. Also, within the last two years, extensive outbreaks of mastitis caused by a fungus, Nocardia asteroides, have been identified by veterinarians in California and Hawaii.

Closer veterinary supervision of treatment for mastitis is essential to assure the use of products to which the causative organisms are susceptible, or such other control and preventive measures as are indicated. For more scientific, effective, and safe control of mastitis in dairy cattle, it is necessary that the veterinary profession in the future educate dairymen to depend less on "self-diagnosis" and administration of antibiotics, and more on continuous herd health programs of veterinary diagnosis, treatment, and supervision of herd and sanitation practices.

Meat and Poultry Inspection

There is a definite need for more veterinary programs of meat and poultry inspection at State and local levels in the United States. The Federal programs cover only 75–80 per cent of the large animals and poultry slaughtered annually, and probably less than half of the slaughtering establishments in the country.

While some of the meat and poultry slaughtering and processing establishments which are not under Federal supervision do receive comparable inspection services from State and local agencies, most do not. State, county, and municipal inspection services need to be strengthened and expanded to provide the protection against unfit meats and poultry, and against economic cheating, which the consuming public expects and should have. In many instances, antemortem and postmortem inspections for wholesomeness are not provided at all; such veterinary programs should be initiated at the State or local levels for all establishments not now serviced.

Salmonellosis

In 1953, there were 8,845 laboratory-verified cases of salmonellosis in Sweden, with at least 90 deaths, caused by products from a single slaughterhouse. This illustrates the hazard which may develop. Salmonella organisms of many types are present in animals and poultry and may be found in meats, poultry, dried and frozen eggs, and unpasteurized milk and manufactured milk products. The most effective and sure way of preventing hazards to the consuming public from the animal reservoirs of salmonellae would be eradication at the source, i.e., production on the farm of salmonella-free animals and poultry, but this would be an extremely difficult, if not impracticable task. In the meantime, meat and poultry inspection services should be strengthened to minimize contamination of the slaughterhouse environment and products with animal wastes during processing. As far as possible, all milk and milk products and dried eggs should be pasteurized. Methods should be developed to prevent the presence of viable salmonellae in frozen eggs.

Diseases Introduced from Other Countries

Introduction into this country of foot-and-mouth disease, contagious bovine pleuro-pneumonia, African swine fever, rinderpest, or the severe form of Newcastle disease could result in a drastic, if not fatal, reduction of available food supplies. Conversely, better control of these diseases abroad would reduce the possibility of accidental introduction into the United States, and at the same time permit increased production of protein in areas which now have sadly inadequate supplies.

Of comparable importance is the fact that communicable diseases are still the scourge of the peoples of many countries, and at least twelve of the major zoonoses recommended by WHO to be made notifiable throughout the world, are of significance in food hygiene programs. They are transmissible through milk, meat or other foods of animal origin or their prevention and control involve certain practices or measures associated with food inspection programs. Diseases in this group are brucellosis, bovine tuberculosis, anthrax, trichinosis, Q fever, salmonelloses, taeniasis, streptococcosis (septic sore throat) pasteurellosis, erysipeloid and common food poisonings such as those caused by salmonella, staphylococcal enterotoxin and Clostridium welchii. These diseases are major problems in many areas of the world.

Thus, there is presented to the world, and particularly to countries such as the United States and Canada, an opportunity and a challenge. Diseases of animals which limit food supplies, and zoonoses which attack, weaken, and kill, must be controlled so that the peoples presently affected can fully realize their potentials for good health and economic progress. A large part of the responsibility, the capability, and the opportunity for resolving the health and economic problems associated with inadequate food supplies and food hygiene safeguards must eventually rest with veterinarians throughout the world. Veterinarians in America can lead the way.

Summary

The place of the veterinarian in municipal milk and food inspection varies with the organizational structure of the municipal health department, the scope of the municipal program, and the extent of veterinary supervision of, or participation in, specific activities.

The role of veterinarians generally is related to and based upon their broad education and knowledge in the biological and medical fields, including particular training on diseases transmissible to man through foods of animal origin; animal nutrition, metabolism, diseases and pathologic processes; and meat and poultry hygiene.

The result is that veterinarians usually perform or directly supervise the inspection of meats and poultry for wholesomeness; are concerned with the prevention and treatment of mastitis and other diseases in herds; conduct disease control and eradication programs such as those for brucellosis and tuberculosis; and carry out research and field investigations on these and related problems. However, these activities may not be carried out entirely by full-time employees of the municipal health agency. On the contrary, they may be conducted on a part-time basis by veterinary practitioners, or may involve to varying degrees veterinary

employees of State or Federal agencies, or the staffs of veterinary colleges or other educational institutions.

The place of the individual veterinarian in municipal milk and food inspection is affected by his personal interest and capabilities, postgraduate education, and experience. With the proper combination of these, plus the opportunity, he may become the supervisor or administrator of specific portions of the municipal milk and food programs, such as the milk sanitation or meat inspection activities, or of the entire program.

Occasionally, an individual veterinarian is appointed as local health officer or as director of the complete environmental health program, where he has administrative control of milk and food inspection as well as of other activities.

RÉSUMÉ

La place occupée par le vétérinaire au sujet de l'inspection municipale de la viande et du lait dépend des cadres des services municipaux d'hygiène, de l'envergure du programme municipal, de l'importance de la surveillance et de la participation vétérinaires dans des activités bien déterminées.

Le rôle des vétérinaires est généralement basé sur leur savoir et sur leurs connaissances approfondies dans le domaine biologique et médical, sans oublier leur entraînement particulier relativement aux maladies transmissibles à l'homme par l'intermédiaire d'aliments d'origine animale, la nutrition animale, le métabolisme, l'évolution des maladies et des procédés pathologiques; l'hygiène de la viande et de la volaille.

Ainsi donc, le vétérinaire fait d'abord l'inspection des viandes et des volailles afin de s'assurer de leur salubrité. Il s'occupe également de la prévention et du traitement de la mammite ou de toute autre maladie qui peut affecter un troupeau; en outre, il dirige les campagnes entreprises pour le contrôle et la suppression de maladies telles que la brucellose ou la tuberculose. Enfin, il effectue les recherches et les enquêtes nécessaires au sujet de problèmes de ce genre ou de tout autre problème connexe. Cependant, il se peut que ces activités ne soient pas l'oeuvre d'employés réguliers d'un service municipal d'hygiène. Au contraire, des vétérinaires praticiens peuvent s'en charger à temps partiel, ou bien certains employés de services provinciaux ou fédéraux peuvent s'en occuper partiellement ou autrement, de même que le personnel des écoles vétérinaires ou d'institutions similaires.

La place occupée par le vétérinaire dans l'inspection municipale du lait et des aliments dépend de l'intérêt qu'il apporte à sa tâche, de sa compétence, de ses études postscolaires et de son expérience. Si on ajoute l'occasion à toutes ces qualités, ce vétérinaire pourra surintendant ou administrateur de campagnes municipales d'inspection des aliments, telles que salubrité du lait ou inspection des viandes, ou les deux à la fois.

Il arrive qu'un vétérinaire soit nommé officier local de santé ou directeur d'une campagne de santé dans un secteur déterminé, alors qu'il détiendra les rênes administratives de l'inspection du lait et des aliments ou de toute autre activité qui s'y rattache.

Editor's Note. Those interested in reading more about this subject should write to Dr. Atkinson for a list of selected references.